

Samson, Harvey S.

2018 – 00542

Exercise 3: Building Images

- Getting setup

```
Command Prompt
Microsoft Windows [Version 10.0.18363.1556]
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C:\Users\Harvey Samson>docker pull ubuntu:16.04
16.04: Pulling from library/ubuntu
Digest: sha256:9775877f420d453ef790e6832d77630a49b32a92b7bedf330adf4d8669f6600e
Status: Image is up to date for ubuntu:16.04
docker.io/library/ubuntu:16.04

C:\Users\Harvey Samson>docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
delner/ping    latest    cd0a93f1915f   8 minutes ago  170MB
ubuntu        16.04     9ff95a467e45   9 days ago    135MB

C:\Users\Harvey Samson>docker rmi cd0
Untagged: delner/ping:latest
Deleted: sha256:cd0a93f1915ff26bf248f1c2b39b49a8cbd1fc0e1fe6e245aad288a4f8e957b
Deleted: sha256:e1b5411602ba766793a7038fb4a371e3d72be58150dd0760174da67ddae8bf48

C:\Users\Harvey Samson>touch Dockerfile
'touch' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Harvey Samson>
```

```
MINGW64/C:/Users/Harvey Samson/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images

Harvey_Samson@LAPTOP-9P79PBHG MINGW64 ~ (master)
$ cd "/C:/Users/Harvey Samson/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images"

Harvey_Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
ubuntu        16.04     9ff95a467e45   9 days ago    135MB

Harvey_Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ touch Dockerfile

Harvey_Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ docker build -t "delner/ping"
"docker build" requires exactly 1 argument.
See 'docker build --help'.

Usage: docker build [OPTIONS] PATH | URL | -

Build an image from a Dockerfile

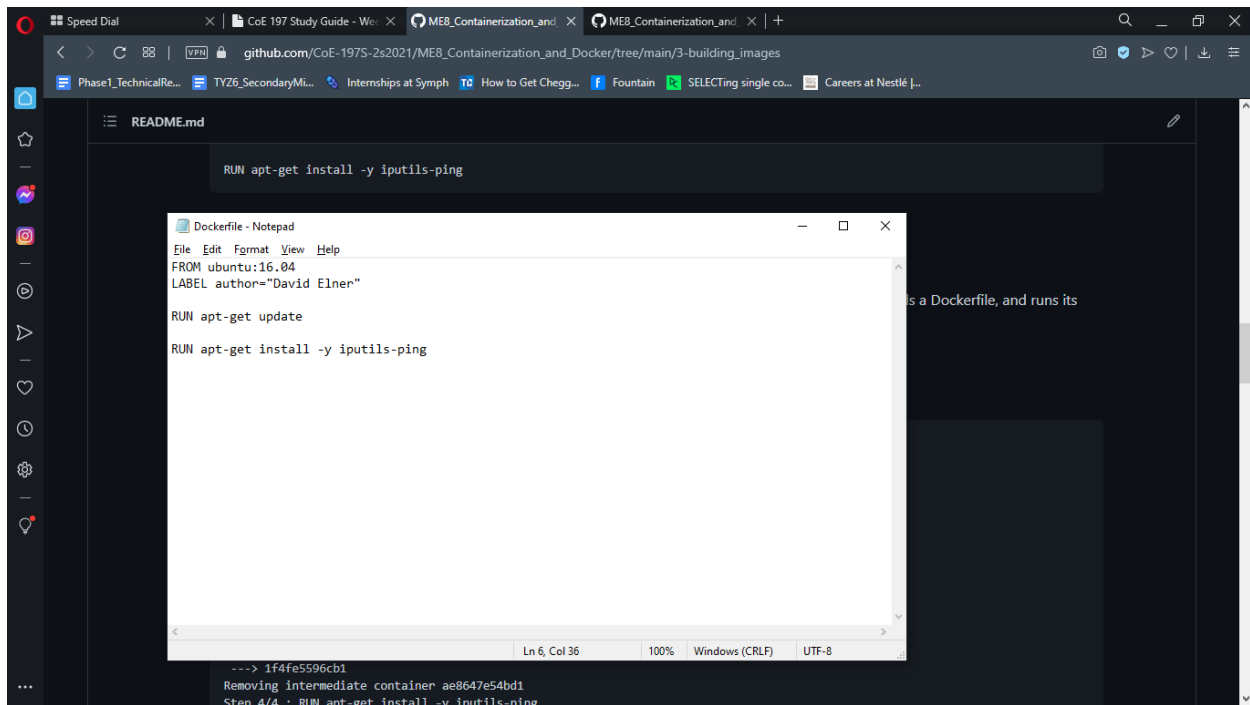
Harvey_Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ docker build -t "delner/ping" .
#2 [internal] load .dockerignore
#2 sha256:4a10623394d01f784d4f286fab590e2fdc2823c48b5246fa4eba6ee60d55a6a
#2 transferring context:
#2 transferring context: 28 0.2s done
#2 DONE 1.6s

#1 [internal] load build definition from Dockerfile
#1 sha256:1c796aa4c9f7fbbee277bdc6534cae4e039fa5e0e63ed67cb82470022af669a
#1 transferring dockerfile: 145B 0.0s done
#1 DONE 1.9s

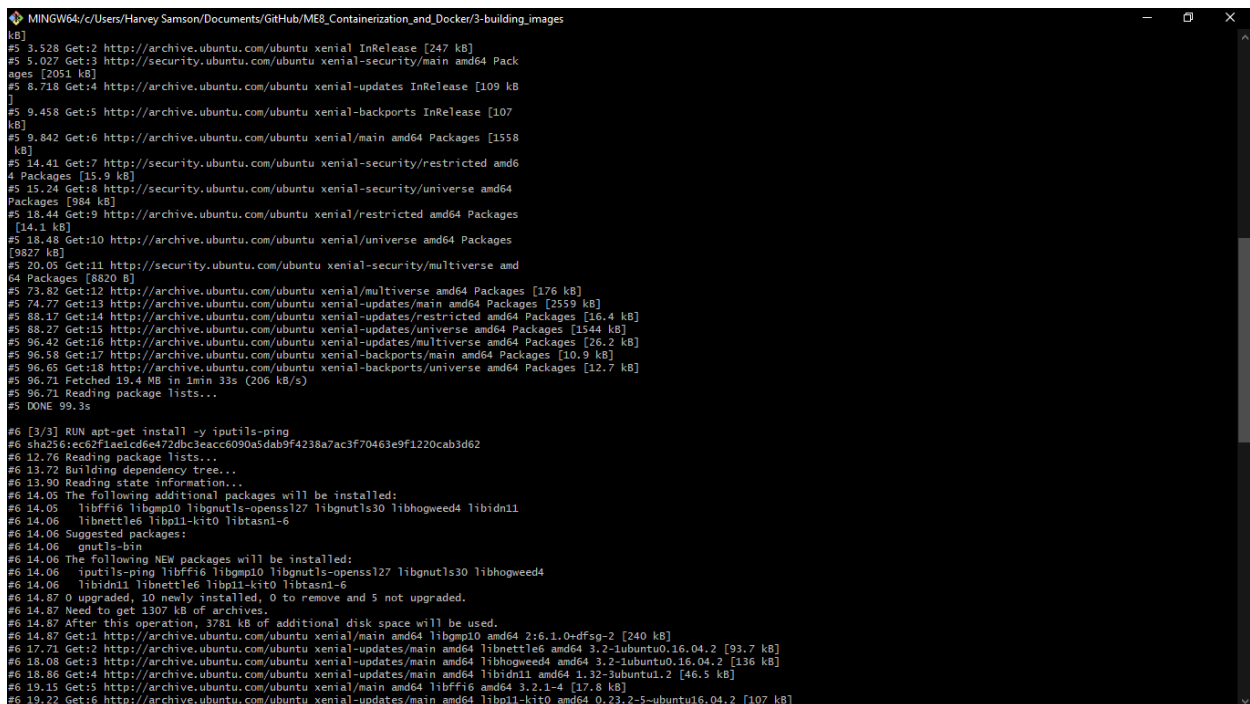
#3 [internal] load metadata for docker.io/library/ubuntu:16.04
#3 sha256:8df2c23d5907ba94f7c361d130cc16c98c9f3ad54aa1c116e150ea96355a327
#3 DONE 0.0s

#4 [1/3] FROM docker.io/library/ubuntu:16.04
#4 sha256:04187b885604d112762d71717a1346cbc4f17e131fc82857a048019e04951455
#4 DONE 2.4s

#5 [2/3] RUN apt-get update
#5 sha256:d85b94c23f2207314e65c2b65f8174fe8e9f9a171cdda392eb5b3a6093800fe1
#5 3.389 Get:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
#5 3.528 Get:2 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
#5 5.027 Get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Pack
```



- Building the Dockerfile



```

MINGW64/c/Users/Harvey Samson/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images
#6 48.87 Unpacking libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
#6 54.16 Selecting previously unselected package libhogweed4:amd64.
#6 54.16 Preparing to unpack .../libhogweed4_3.2-1ubuntu0.16.04.2_amd64.deb ...
#6 54.90 Unpacking libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
#6 60.30 Selecting previously unselected package libidn11:amd64.
#6 60.30 Preparing to unpack .../libidn11_1.32-3ubuntu1.2_amd64.deb ...
#6 61.02 Unpacking libidn11:amd64 (1.32-3ubuntu1.2) ...
#6 66.20 Selecting previously unselected package libffi6:amd64.
#6 66.20 Preparing to unpack .../libffi6_3.2.1-4_amd64.deb ...
#6 66.92 Unpacking libffi6:amd64 (3.2.1-4) ...
#6 72.19 Selecting previously unselected package libp11-kit0:amd64.
#6 72.19 Preparing to unpack .../libp11-kit0_0.23.2-5-ubuntu16.04.2_amd64.deb ...
#6 72.93 Unpacking libp11-kit0:amd64 (0.23.2-5-ubuntu16.04.2) ...
#6 78.10 Selecting previously unselected package libtasn1-6:amd64.
#6 78.10 Preparing to unpack .../libtasn1-6_4.7-3ubuntu0.16.04.3_amd64.deb ...
#6 79.23 Unpacking libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
#6 80.18 Selecting previously unselected package libgnutls30:amd64.
#6 80.18 Preparing to unpack .../libgnutls30_3.4.10-4ubuntu1.8_amd64.deb ...
#6 80.29 Unpacking libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
#6 80.95 Selecting previously unselected package libgnutls-openssl127:amd64.
#6 80.95 Preparing to unpack .../libgnutls-openssl127_3.4.10-4ubuntu1.8_amd64.deb ...
#6 81.05 Unpacking libgnutls-openssl127:amd64 (3.4.10-4ubuntu1.8) ...
#6 81.56 Selecting previously unselected package iputils-ping.
#6 81.56 Preparing to unpack .../iputils-ping_3:20121221-5ubuntu2_amd64.deb ...
#6 81.66 Unpacking iputils-ping (3:20121221-5ubuntu2) ...
#6 82.14 Processing triggers for libc-bin (2.23-0ubuntu1.2) ...
#6 82.70 Setting up libgmp10:amd64 (2:6.1.0+dfsg-2) ...
#6 83.15 Setting up libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
#6 83.50 Setting up libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
#6 83.87 Setting up libidn11:amd64 (1.32-3ubuntu1.2) ...
#6 84.16 Setting up libffi6:amd64 (3.2.1-4) ...
#6 84.48 Setting up libp11-kit0:amd64 (0.23.2-5-ubuntu16.04.2) ...
#6 84.76 Setting up libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
#6 85.03 Setting up libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
#6 85.30 Setting up libgnutls-openssl127:amd64 (3.4.10-4ubuntu1.8) ...
#6 85.67 Setting up iputils-ping (3:20121221-5ubuntu2) ...
#6 85.86 Setcap is not installed, falling back to setuid
#6 85.96 Processing triggers for libc-bin (2.23-0ubuntu1.2) ...
#6 DONE 87.0s

#7 exporting to image
#7 sha256:e8c613e07b0b7ff33893b694f7759a10d42e180f2b4dc349fb57dc6b71dcab00
#7 exporting layers
#7 exporting layers 1.2s done
#7 writing image sha256:e634d1a1f07de240d11a398c1c30205b8937731d5af1fb0d34860a9de43b102
#7 writing image sha256:e634d1a1f07de240d11a398c1c30205b8937731d5af1fb0d34860a9de43b102 0.1s done
#7 naming to docker.io/delner/ping 0.1s done
#7 DONE 1.6s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
Harvey Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ |

```

```

MINGW64/c/Users/Harvey Samson/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

Harvey Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ docker build -t 'delner/ping' .
#2 [internal] load .dockerignore
#2 sha256:48bcd289203ee9c2040a9965831705f36f547257b487f50d21cf307f1535f7b2
#2 transferring context: 2B done
#2 ...

#1 [internal] load build definition from Dockerfile
#1 sha256:17ab15cddb3b957e22f98eac002ce4036d1bbb010a438fd06450351d392ce688
#1 transferring dockerfile: 31B done
#1 DONE 1.6s

#2 [internal] load .dockerignore
#2 sha256:48bcd289203ee9c2040a9965831705f36f547257b487f50d21cf307f1535f7b2
#2 DONE 1.8s

#3 [internal] load metadata for docker.io/library/ubuntu:16.04
#3 sha256:8dff2c23d5907ba94f7c361d130c1c6c98f3ad54aalc116e150ea96355a327
#3 DONE 0.0s

#4 [1/3] FROM docker.io/library/ubuntu:16.04
#4 sha256:04187b885604d112762d7171a1346cbc4f17e131fc82857a048019e04951455
#4 DONE 0.0s

#5 [2/3] RUN apt-get update
#5 sha256:d85b94c23f2207314e65c2b65f8174fe8e9f9a171cdda392eb5b3a6093800fe1
#5 CACHED

#6 [3/3] RUN apt-get install -y iputils-ping
#6 sha256:ec62f1ae1cd6e472dbc3eacc6090a5dab9f4238a7ac3f70463e9f1220cab3d62
#6 CACHED

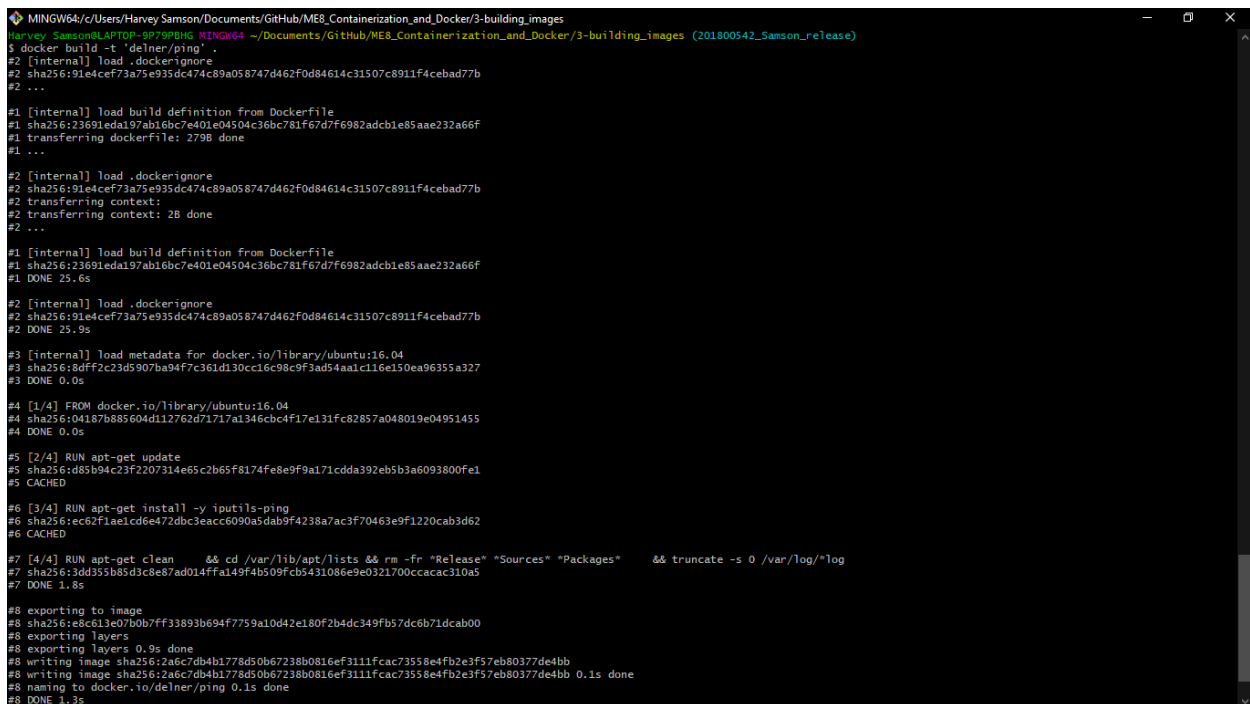
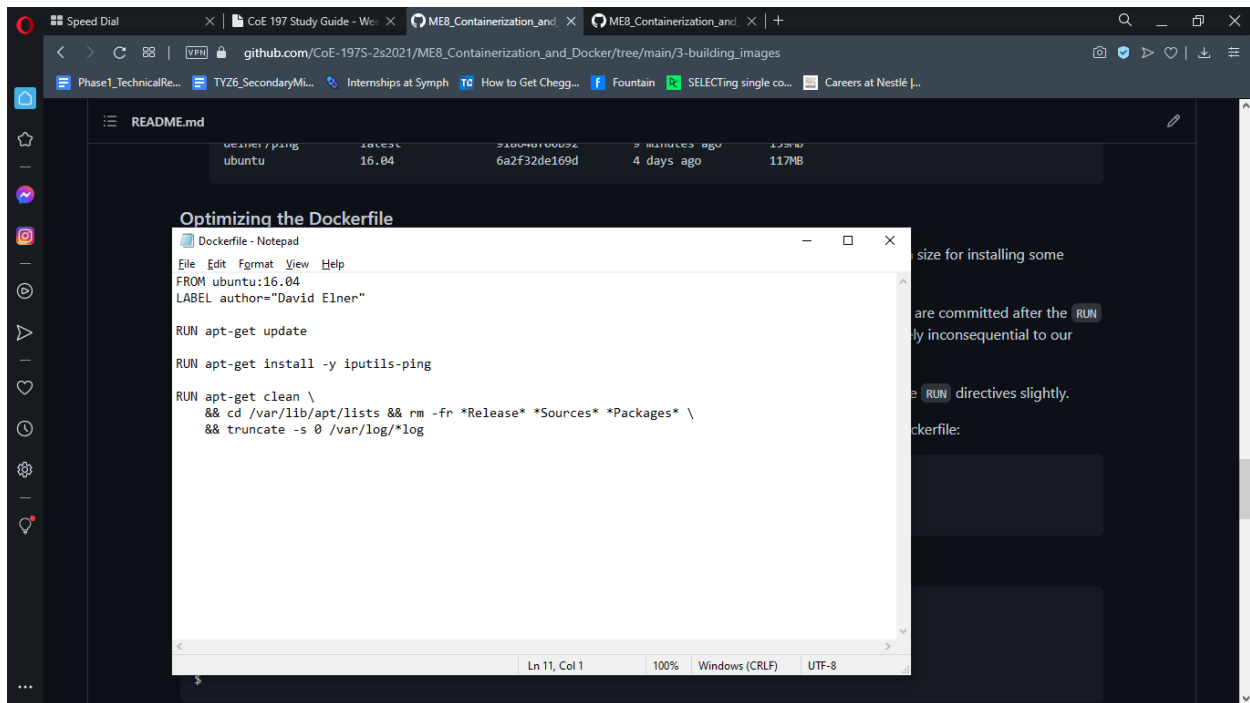
#7 exporting to image
#7 sha256:e8c613e07b0b7ff33893b694f7759a10d42e180f2b4dc349fb57dc6b71dcab00
#7 exporting layers done
#7 writing image sha256:e634d1a1f07de240d11a398c1c30205b8937731d5af1fb0d34860a9de43b102
#7 writing image sha256:e634d1a1f07de240d11a398c1c30205b8937731d5af1fb0d34860a9de43b102 0.0s done
#7 naming to docker.io/delner/ping done
#7 DONE 0.3s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

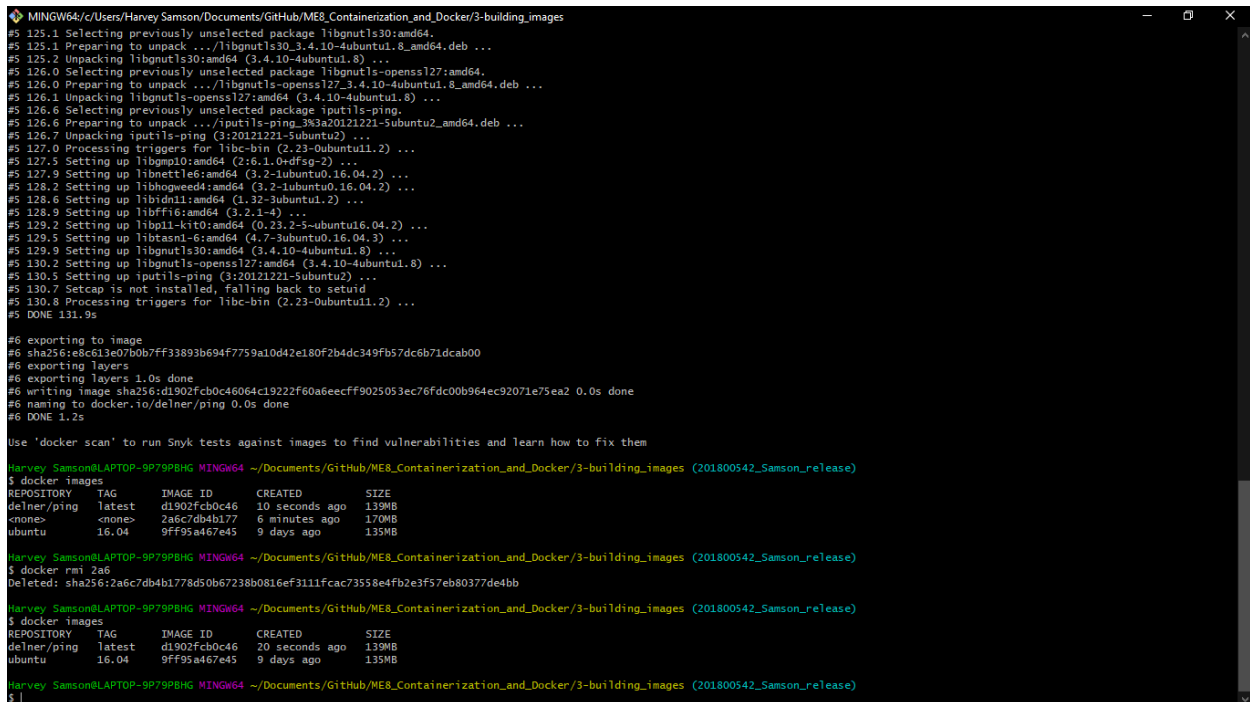
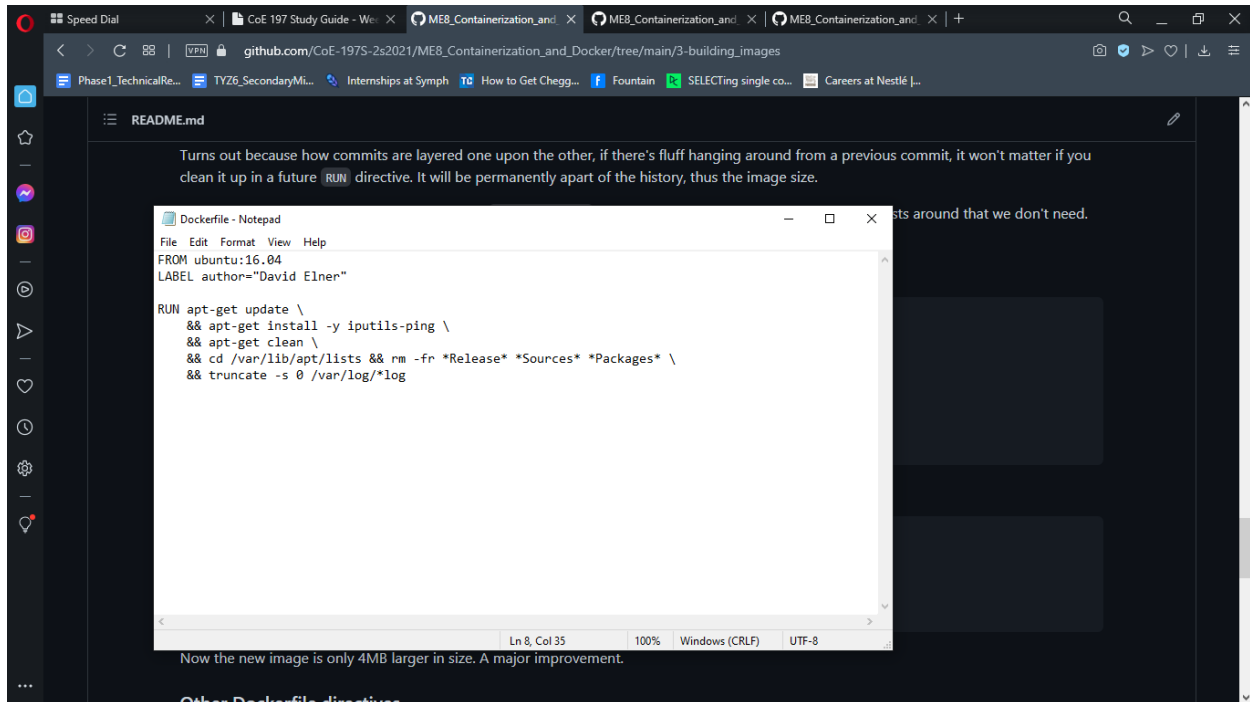
Harvey Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
delner/ping latest e634d1a1f07d About a minute ago 170MB
ubuntu 16.04 9ff95a467e45 9 days ago 135MB

Harvey Samson@LAPTOP-9P79PBHG MINGW64 ~/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201800542_Samson_release)
$

```



- Optimizing the Dockerfile



- Other Dockerfile directives

```
root@6b444acde975: /  
Microsoft Windows [Version 10.0.18363.1556]  
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C:\Users\Harvey Samson>docker run -it delner/ping  
root@6b444acde975:/# ping google.com  
PING google.com (216.58.197.206) 56(84) bytes of data:  
64 bytes from 216.58.197.206: icmp_seq=1 ttl=37 time=83.9 ms  
64 bytes from 216.58.197.206: icmp_seq=2 ttl=37 time=101 ms  
64 bytes from 216.58.197.206: icmp_seq=3 ttl=37 time=110 ms  
^C  
--- google.com ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 2003ms  
rtt min/avg/max/mdev = 83.973/98.703/110.408/11.005 ms  
root@6b444acde975:/#
```